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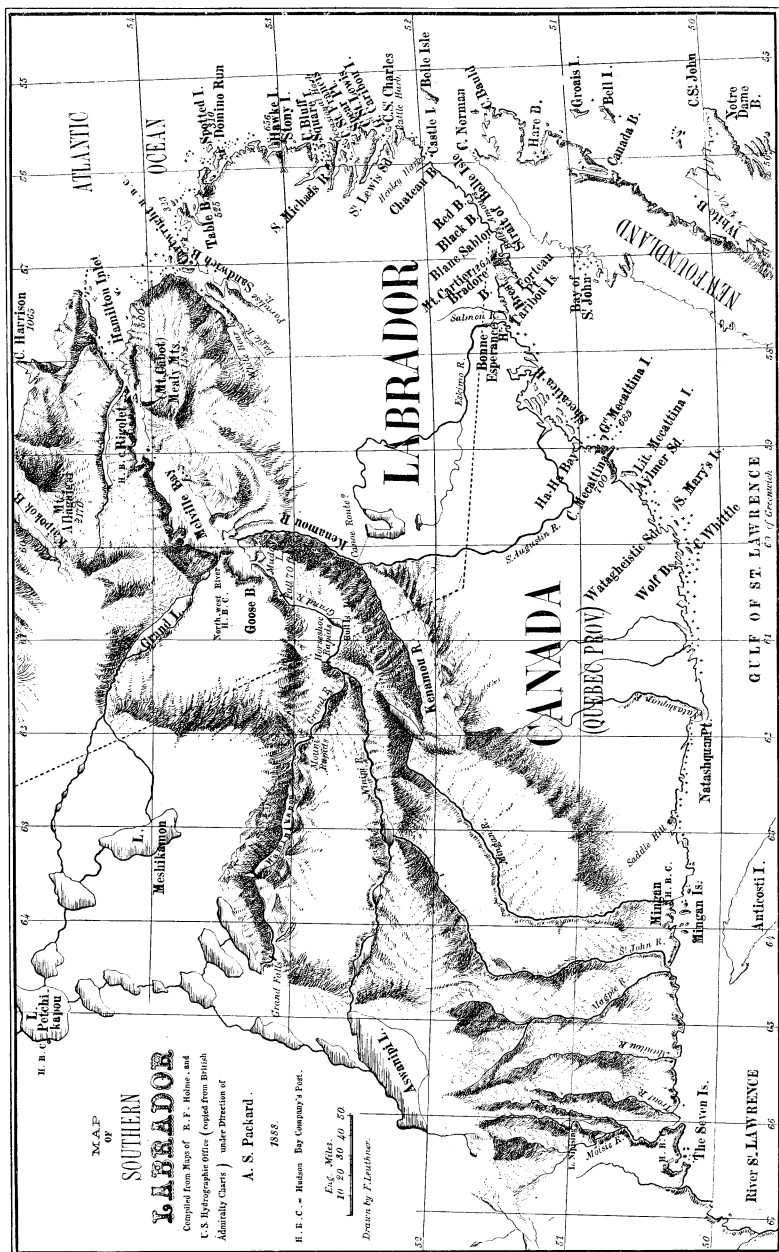
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# A SUMMER'S CRUISE TO NORTHERN LABRADOR.

I. FROM BOSTON TO SQUARE ISLAND.

BY  
ALPHEUS S. PACKARD.

IN the spring of 1864, Mr. William Bradford, the well-known marine artist of New York, organized a party to cruise along the coast of Labrador, and if possible to reach Hudson's Straits, for the purpose of painting icebergs and arctic scenery. After having previously spent a summer on the southern coast, with no opportunity of extended explorations, it seemed rare good fortune to make one of a party bound for the Moravian settlements, and possibly Cape Chidley.

On the 4th of June, at 10.15 a.m., the fast schooner *Benjamin S. Wright*, Captain Brown, with two pilots, Capt. Ichabod Handy of Fair Haven, Mass., for the northern coast, and Capt. French for the southern shore; a Norwegian mate and two deck hands, with a cook and two cabin boys, carrying a party of fourteen gentlemen comprising lawyers, clergymen, naturalists, sportsmen and pleasure seekers, left the Philadelphia Packet Pier, Boston. Owing to an easterly wind a tug towed us down to the Narrows, where we spread our canvas, and beat down to Provincetown for the purpose of buying a whaleboat, making harbor there at 9.30 in the evening.

Spending Sunday at Provincetown, where we visited some friends in the coast guard, several of whom afterwards distinguished themselves in the war of the Rebellion, on the 6th, with a fresh northwest wind which so effectually ruffled the ocean that nearly every man settled his account there and then with the sea-god, our course was laid for Cape Sable, which we sighted at about 1 o'clock in the afternoon of the 7th.

The following day we bowled along at the distance of 10 or 15 miles from the Nova Scotian coast, the wind blowing a fresh gale from the northwest, and about 2 a. m. of the 8th ran into Chedabucto Bay, anchoring four miles from Port Mulgrave. Weighing anchor the next day and moving up to the town, a mean little fishing hamlet, while the crew took in wood and water, each one, according to his taste, went either shopping or trouting in the rain, or geologizing. On the following day I walked towards Porcupine Point, a bold headland said to be 275 feet above the Gut of Canso. The view over the Gulf of St. Lawrence is a very pleasant one. The Gut of Canso opens into the Gulf four miles from the Point. The drift material consists of a rich soil containing bits and masses of red sandstone, some of the fragments containing calamites and the impressions of delicate seaweeds. The rocks *in situ* are a white conglomerate dipping at an angle of 80° and with a N. and S. strike.

The shores of the Gut of Canso are high and bold on the western side, but much lower on the Cape Breton shore. The contours of the hills on the Nova Scotian coast are like those of a granite-gneiss region, the hills terminating in drift "scaurs." On the Cape Breton side the houses are more numerous and the farms either more

fertile or cultivated with greater care. At Port Mulgrave the inhabitants did not raise vegetables enough for their own consumption ; and not infrequently a farmer was seen ploughing with a single ox. Exchange was \$1.95. The people were all "sesesh." Although for the disunion of the "States," nothing could separate them from the love of whiskey and gin, as in the course of the afternoon there was a miserable stabbing fray, witnessed by a good many of the inhabitants, though it should be said that there were thirty sail then in the port, from which part of the material for the affray was afforded.

Our fishermen returned with a liberal supply of trout, and Mr. Bradford shipped a steward, who turned out to be an Indian soldier, and had assisted in blowing Sepoys from the cannon's mouth. Whether he was morally and intellectually worse or better than a Sepoy was often a matter of discussion on the cruise.

We were now ready to push out into the Gulf, and the latter was now ready for the reception of the *Benj. S. Wright*. For but a few days ago vessels had been jammed in the ice immediately north of Port Mulgrave, the ice having remained later in the Gulf and been more abundant the past spring than for years. We were told that it was possible for people to walk on the ice a hundred miles out from the Magdalen Islands.

The next day found us off St. George's Bay, the sport of light, baffling winds or of dead calms, but these enabled us to receive lasting impressions of the beautiful green slopes of the Cape Breton shores, with their expanse of green sward framing the square acres of ploughed land centred by red farm houses. These were our last views of cultivated fields and well-trimmed glebes, until

on our return we beheld the rich red farm-lands of Prince Edward's Island.

Sunday the 12th was a red-letter day, spent about the home of the gannet or solan goose. At seven o'clock in the morning—and what a glorious one it was : the air soft and balmy, our good vessel's bows gently rising and falling on the swell as if saluting in a measured,

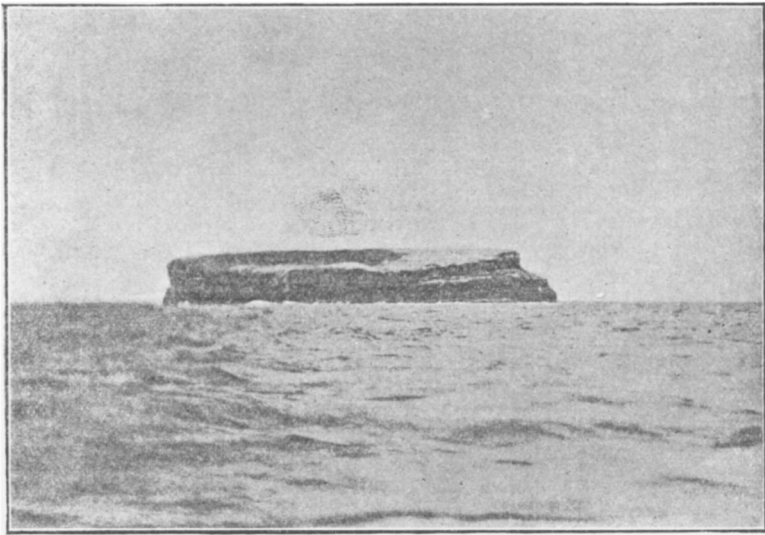


FIG. 1.—THE LARGEST OF THE BIRD ROCKS, AS SEEN IN 1864.  
From a Photograph by Black.

dignified way the appearance of the god of day—at this hour Entry Island, one of the Magdalens, was twelve miles off. It is a high mass of red sand-stone with abrupt sides and surmounted by two knolls ; near it were several small islands, and a high grayish rock deeply incised by narrow valleys plunging suddenly down to the sea.

At noon we approached the Bird Rocks, a group of three islets, the largest 250 feet high and from a quarter to half a mile in length, the longest diameter extending east and west. The top is nearly flat and slopes gently towards the south. It is formed, as seen from the south side through a good glass at a distance of half a mile, of red friable sandstone, with thin beds of grit, which near the water's edge are several feet in thickness, while several loose fragments look like boulders, though there are no true transported rocks on the island.

The islets were nearly white on top, and I supposed this was due to the guano, but Mr. Bradford assured me that the white frosting, as it seemed to be, was the birds themselves—and sure enough, except a central patch of brown and green herbage, the western end was in part, and the eastern half of the island entirely white, with female gannets resting on the rock above as well as on the larger shelves on the sides, while the small nooks and shelves of grit were appropriated by myriads of murres.

At the report of a gun swarms of birds would rise and flutter in the air like flies from the rock, and at least 10,000 were there. To the leeward many gannets, males, were seated in the water, or flying over it, in company with a few murres—but nearly all were as if in ceaseless motion, and busy, fishing or returning with fish to the avian metropolis.\*

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\* In this connection it is interesting to read the description of the Bird Rock in Cartier's 1st voyage,

“Wee went southeast about 15 leagues, and came to three Ilands, two of which are as steepe and vpright as any wall, so that it was not possible to climbe them; and betweene them there is a little rocke. These Ilands were as full of birds, as any field or meadow is of grasse, which there do make their nestes; and in the greatest

Mr. Bradford spent a busy day in sketching the unique scene, and his photographer, Mr. Pierce, from Black's studio in Boston, took four good photographs of the rocks and birds. These rocks are the remnants of what were once vastly more extended strata, and the question arose in my mind whether the red soil of Port Mulgrave and vicinity were not the *débris* which had been in part borne from the Magdalen Isles, and in part from Prince Edward's Island.

Since 1864, when the photograph was taken by Mr. Bradford of which the accompanying sketch is a reproduction, great changes have come over the famous gannet rookery of Bird Rocks. Mr. W. Brewster, who, with Prof. Hyatt and others, visited these rocks in 1881, says in his account : " In 1860 the number of gannets breeding on the *top* of Great Bird (then uninhabited), was estimated by Bryant at about 'fifty thousand pairs,' or one hundred thousand birds. In 1872 Maynard found this

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of them there was a great and infinite number of those that wee call Margaulx, that are white, and bigger than any geese, which were seuered in one part. In the other were onely Godetz, but toward the shoare there were of those Godetz, and Apponatz. We put into our boates so many of them as we pleased, for in lesse than one houre we might have filled thirtie such boats of them : we named them the Ilands of Margaulx. About five leagues fro the said Ilands on the west, there is another Iland that is about two leagues in length, and so much in breadth : there did we stay all night to take in water and wood. That Iland is enuironed round about with sand and hath a very good road about it, three or foure fadome deep. Those Ilands have the best soile that euer we saw, for that one of their fields is more worth then all the New land. We found it all full of goodly trees, medowes, fields full of wild corne and peason bloomed, as thick, as ranke, and as faire as any can be seene in Britaine, so that they seemed to have bene ploughed and sowed. There was also a great store of gooseberies, strawberies, damaske roses, parseley, with other very sweet and pleasant hearbes. About the said Iland are very great beastes as great as oxen, which have two great teeth in their mouths like vnto elephants teeth, and liue also in the sea. We saw one of them sleeping vpon the banke of the water ; wee thinking to take it went to it with our boates, but so soone as he heard vs, he cast himselfe into the sea. We saw also beares and wolves ; we named it Brions Iland. (Hakluyt, iii. 254.)



portion of the colony reduced to about five thousand birds (a lighthouse had been erected on the summit of the rock and several men were living there). When we landed in 1881 the top of the rock was practically abandoned, although there were some fifty nests at the northern end, which had been robbed a few days before, and about which the birds still lingered."

Mr. Brewster says, however, that the common guillemot (*Lomvia troile*) still breeds at Bird Rocks in amazing numbers, but that the number is rapidly decreasing, owing to the introduction of a cannon which is fired every half hour during foggy weather. "At each discharge," he says, "the frightened murrelets fly from the rocks in clouds, nearly every sitting bird taking its egg into the air between its thighs and dropping it after flying a few yards. This was repeatedly observed during our visit, and more than once a perfect shower of eggs fell into the water around our boat."

At 6 o'clock this evening we were 95 miles from Little Mecatina Island, and at 11 o'clock of the next day (the 13th), we sighted land lying under a mirage which looked like the land itself, while the snow banks ashore were transformed into icebergs floating in the *quasi* sea. This singular mirage lasted until evening. As the land gradually "hove" in sight the mirage receded and the bergs became veritable banks of snow. Little Mecatina was passed at 6 in the evening; its longer diameter was north and south, and the southern end of the glaciated island showed finely the "stoss" side, the "struck" side gradually sloping towards the north. The Labrador coast at this point becomes high and bold, presenting a continuous front to the Gulf,

with an occasional "hump," rising perhaps 300 feet or more above the general level of the land. The Island of Mecatina is 685 feet above the Gulf, Cape Mecatina being the highest land from Mingan to Bradore.

We dropped anchor in Sleupe harbor in Gore Island, after the quickest voyage Capt. French had ever made. The run from Boston had been a fine one, northwest winds throughout, and no fog. At sunset the thermometer was 42°, and it grew still cooler as we ran into our harbor, which was on the southern exposure, on which were numerous snow banks in the deep gulches leading down to the water.

The rocks were red syenite, like those of Mt. Desert, Me., with its characteristic hummocky outline and precipitous walls fronting the sea. No boulders were seen about the harbor, but the rocky shores were marked and polished by the ice for a few feet above the water's edge.

The murre and saddle-backed gulls were now just hatching, while the eider ducks were beginning to lay their eggs. The curlew berry was now in flower. In the garden of one of the settlers (Michael Canté), who were French Canadians, the rhubarb or pie plant was just above ground, the parsnips were six inches high, and the grass about the houses was four inches in height, but as yet there was no verdure on the hills, the surface being still sere and rusty, the snow having so recently melted away. The season opens here the middle or last of May, when the snow mostly disappears. The ice left the bay the 20th of May, and about this date the black bear comes out of his winter quarters. It was too early for cod or salmon, and the capelin had not appeared.

Our harbor was between two islands, and on one were two houses, and on the other five, one of them a well-built, neat house. About them lounged several Esquimaux dogs. We dredged in ten fathoms on a rocky bottom, not however bringing up any novelties, though the animals were all of purely Arctic types.

June 14 was spent in egging and in collecting insects. Mr. Bradford secured the services of a Frenchman and his sail-boat, and with several others of the party landed on three islands situated four or five miles away. We found eight nests and twenty-five eggs of the eider duck, with those of the murre or guillemot and auk, besides three gull's eggs, probably those of the saddle-back. We also found a nest of the red loon : it was situated on the edge of a small pond. The nest, partly submerged, was fourteen inches in diameter and in size and appearance like the gulls' nests, though the latter were placed in dryer localities. The eider ducks' nests were abundant, as were those of the razor-billed auks, but those of the murre were even less common. The eider ducks ten years ago were extremely abundant, but the unremitting attacks upon their nests by "eggers" has resulted in the partial extinction of this valuable and interesting bird. All the eiders were busy in making their nests and in laying their eggs. The old or completed nests contained a great mass of down, and were 12 to 15 inches in outside diameter, the downy mass in which the eggs sank being five or six inches high ; the newer nests were without down ; there were about five eggs to a nest. Most of the nests which we saw were built on low land, near pools and not far from the sea water, in a dense thicket of dwarf spruce trees, called "tucking bush" or "tuckermel." The

murres and auks, as is well known, do not make nests, but drop their eggs under projecting rocks, or on overhanging shelves on high cliffs, or under blocks of granite. I found one murre's egg which had been laid on the ice under a huge rock, and as I worked my way under the rock to get at the single egg, the stupid bird did not fly, but simply moved a few steps beyond my reach, making an odd guttural noise. It need scarcely be added that the vicinity of a murre's or auk's nest is filthy in the extreme. The egg-shell of these nestless birds is very thick, so that they may roll about or drop down without breaking; why they are so much more conical or pointed at one end than usual I leave to others to answer. We also saw a king eider flying with a small flock of eiders, as well as several "shags" and a northern phalarope.

Insect-life was now stirring; the pools abounded in water boatmen (*Corixa*), and whirligig beetles (*Gyrinus*), while a species of feathered gnat (*Corethra*) was just leaving the pupa, the cast skins of the latter floating on the surface of the pools. A lonely humble bee was flying fussily about, a syrphus fly was hovering over the flowers of the cloudberry, and other insects were found under stones, amongst the moss or in the water. The appearance of insect life corresponded to that of Southern Maine at the end of April. The next day a white-faced wasp (*Vespa maculata*) flew aboard the vessel. The day was spent in searching for eider nests, of which I found a dozen in the "tucking bush," with thirty eggs, and the rude nests and eggs of the saddle-back gull.

June 16th was a beautiful day, rather warm, with light winds from the east and south or quite calm. In the afternoon a shower passed over from the west,

and at night the wind was northerly; the southwest summer winds had not yet set in, the prevailing winds being northerly. We spent the day in a search for the eggs of the "waupigan" or common cormorant, and those of the shag or double-crested cormorant, William, a very intelligent French Canadian, taking us to their nesting place in his row boat. The nests were situated on a high cliff, a sort of shelf. We let William down over the precipice with a rope. There were fifty-five nests in all, and over them rose flocks of cormorants disturbed at our coming; they were very shy and flew rapidly far off, wheeling about in circles, but not daring to come near the nesting place. There were five eggs in a nest; the latter were about 20 inches in outside diameter, built of thick birch limbs, whitened, as was the rocky shelf, with the excrement of the birds, and the entire neighborhood was pervaded with a far-reaching and intolerable stench of decaying fish. The eggs of the common cormorant are said to be laid earlier in the season than those of any other bird; they are long, pointed, and of a dirty tea color, some nearly white. The shags' nests, mixed with those of the waupigan, were situated in another place adjoining. They are usually laid on the bare rock, and William was surprised to find them on the precipice. The eggs are smaller than those of the common cormorant, are whiter and more pointed, and are laid later than those of any other bird.

On our return we went by invitation into William's house; his children were attractive in looks, with fine eyes. This family and a neighboring one were the two leading French Canadian families on the coast. They told us that it was harder to gain a livelihood than

heretofore, the game and fish getting scarcer. Still, one family winter before last shot 1100 partridges. William, by the way, told us that there were four varieties of partridge, the spruce partridge, and the white or ptarmigan, of which they distinguish the mountain ptarmigan and the river ptarmigan, the latter the rarest ; the fourth kind they call the pheasant. The partridges were said to be now laying their eggs. William raised last year twenty-five bushels of potatoes, also turnips, while barley, having three months to grow, ripens on this inhospitable coast. Sheep might be raised ; there were no cows, though to the westward they are kept the year through. We were told that a walrus was killed near St. Augustine within twenty-five years, and that two had been seen in this vicinity since then. It will be remembered that the walrus formerly abounded in the Gulf of St. Lawrence, having been rendered extinct by the early fishermen on the Magdalen Islands.

We saw an eggging vessel at a distance. The "egggers" watch their chances to take great quantities of eggs of sea birds, especially those of the eider duck and murre. But there are now few who follow this illegal and nefarious occupation. Twenty years ago the business was at its height, and a schooner would load a cargo of 65 barrels of eggs and take them to the States or up the St. Lawrence river to Quebec or Montreal. Of late years they would give half of what they found to the settlers on the coast as hush money. When collecting the eggs they would make "caches" of them, covering the heaps with moss ; and if they were on the point of being caught they would smash the whole cargo of eggs rather than be seized with them. Many are the adven-

tures which the eggers have passed through, and the stories told of them rival the tales of smugglers and privateersmen on more favored shores. They still collect and wantonly destroy the eggs of murre.

The eggs of the eider ducks we found to make a good omelet, but those of the murre and gulls were too fishy to be palatable; the food of the murre and puffin as well as gulls consisting largely of small fish, such as capelin and lance fish (*Ammodytes*). We saw male eiders two years old; they were brown with a little white; we were told that the eider is four years in arriving at maturity; the guillemot only two years; the puffins and murre becoming adult in one year. The eider duck is easily domesticated, and the young will follow a person to whom they are accustomed like a dog.

As soon as our vessel came into shallow water,—and in our boat excursions we were constantly impressed by the transparency of the water on this coast—we could look down for thirty or forty feet and see with distinctness the bottom, with dark masses of sea-urchins and the starfish. The water is more transparent than on the Florida coast. Indeed the fishermen sometimes complain of this property of the water, saying that the fish can see the nets too readily and do not enter them. The water is so clear that the ctenophores *Idyia roseola* and *Pleurobrachia*, as well as another kind I could not secure, were beautifully distinct far down in the pellucid depths. Fishing had begun at this locality to-day, the cod having struck in. It is evident that the ice having disappeared for nearly a month the water inshore undoubtedly had grown warm enough to allow the cod and other fish to come into shoal water and spawn. It was evident that as the sea-

son opened later and later from south to north, the movement inshore would be later and later from south to north, and this fact has undoubtedly given rise to the popular impression that the cod and other fish migrated from the southern to the northern portions of the coast of our continent.

I anxiously questioned William as to the nature of the interior of Labrador. He told me that there were plains and terraces inland ; that there were toads and frogs and "lizards," which being interpreted undoubtedly means the salamander, most probably *Plethodon glutinosa* of Baird. He had been here twenty years before he saw a grasshopper, but this was not on the coast, but in the interior, and I know scarcely a better criterion of an Arctic land-fauna than the entire absence of grasshoppers on the Labrador coast, since none occur in the circumpolar regions, either treeless Arctic America, Greenland or Spitzbergen ; but the interior wooded portion of the Labrador peninsula supports a truly boreal or "Canadian" insect fauna, with grasshoppers.

Among the insects found were the showy caterpillars of *Arctia caja* and a weevil. Of the more noticeable flowers there were a pink *Arenaria*, and a leek-like plant which I have often seen on the summit of Mt. Washington.

The 17th we weighed anchor, and with light winds and some rain early in the morning, but a strong northeasterly head wind in the forenoon, we made only twenty-five miles during the day. The coast along our course was of very even height, the monotonous outline being relieved by an occasional elevation. The rock was of syenite with its characteristic scenic features. It was of



warm, reddish flesh tints, but full of chinks and cracks, made by the water percolating or running into them and freezing, resulting in the cracking and disruption of large rock masses. Then the continued action of the frost year after year widens the chinks into gulches, with even, precipitous sides, now filled with snow banks ten or fifteen feet long, and sometimes a dozen or more rods in extent, their edges bordered with Arctic flowers. The hills were barren on top, with moss and dwarf spruce in the cavities or ravines. Here and there were to be seen clumps of grass, but the herbage in a Labrador foreground is not grasses or sedges, but low shrubby woody plants such as the dwarf cranberry, the curlew berry (*Empetrum nigrum*), etc., which form a dense uniform carpet of varied but dull green hues.

On the afternoon of the 18th we dropped anchor near Caribou Island, and on landing found Mr. Carpenter, the missionary of these shores, who had befriended us in so many ways while camping on this island in the summer of 1860. He was well and prospering in his good work. I lost no time in borrowing a spade and digging for quaternary fossils, and was rewarded with the discovery of several species not detected in 1860; among these were *Serripes groenlandicus*, *Buccinum undatum*, etc.

On the evening before June 20, the longest day of the year, I could read fine print until half-past eleven at night. The next morning I dredged in eight fathoms before weighing anchor, and was delighted to find several large specimens of a delicate bivalve shell, (*Pandorina arenosa*); it was afterwards dredged up the coast at Long Island in fifteen fathoms in sand

and stony bottom. It had not before been found south of the polar seas; its discovery so far south was interesting from the fact that we had found it in a fossil state in sandy strata of clay at Brunswick, Me., while it was found in the quaternary clays at Saco, Me., by Mr. C. B. Fuller. The association of this shell with *Nucula expansa* (antiqua) in the brick-yard clays gives positive proof that during the wane of the ice period the shore of Maine was the home of a truly polar assemblage of marine animals, and that then as now on this coast these shells were not confined to deep water, but lived in shallow retired bays in water not over 50 feet in depth.

Throughout the day we were in sight of the butte-like Bradore Hills, the highest of the three mountains being 1264 feet above the gulf. As these mountains overlook the scene of Jacques Cartier's explorations in the Straits of Belle Isle, we would suggest that the highest of the three elevations be named Mt. Cartier.

On the shores of Bradore Bay are still to be seen, it is said, the ruins of the ancient port of Brest, which was founded by the Bretons and Normans about the year 1500. The ruins are situated about three miles west of the present boundary of Canada at Blanc Sablon. Samuel Robertson states in his "Notes on the Coast of Labrador," "As to the truth of Louis Robert's remarks there can be no doubt, as may be seen from the ruins and terraces of the buildings, which were chiefly constructed of wood. I estimate that at one time it contained 200 houses, besides stores, etc., and perhaps 1000 inhabitants in the winter, which would be trebled during the summer. Brest was at the height of its prosperity

about the year 1600, and about thirty years later the whole tribe of the Eskimo, who had given the French so much trouble, were totally extirpated or expelled from that region. After this the town began to decay, and

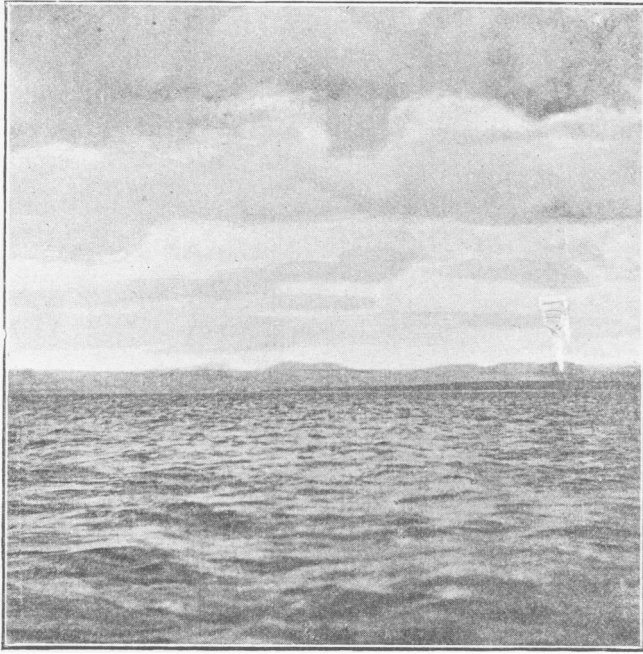


FIG. 2.—THE BRADORE HILLS, THE HIGHEST PEAK MT. CARTIER.

towards the close of the century the name was changed to Bradore."

By sun-down our vessel had made only ten miles, being off Belles Amours, with a southerly and very light breeze. The sunset was a glorious one, while the moon rose through the haze and mirage over the snow banks of the Newfoundland coast. At three in the afternoon we

saw several miles ahead of us the fields of ice which we were soon to encounter, choking up the Straits, and enhanced in apparent extent by the mirage. The Labrador coast, along which we were sailing, is very bold and bluff-like, with lower points of land reaching out to us in a picturesque way, the remarkably even outline of the coast being interrupted by the Bradore Hills.

The dredge was put down about two miles from shore in from ten to fifteen fathoms on a hard stony bottom, with good success. Beautiful specimens of *Lucernaria quadricornis*, four inches in height and of a dull amber brown, came up in the same dredge with that superb naked mollusc, *Dendronotus arborescens*, which were of a beautiful amber hue, dotted with white points. From the stomachs of fishes caught by some of the party were extracted specimens of a rare Arctic crab, (*Chionæcetes opilio*,) which proved to be not uncommon in from ten to fifty fathoms in the Straits of Belle Isle.

The next day, from nine in the morning until three in the afternoon, we moved slowly through the floe ice, which proved to be the outskirts of the immense fields of ice which this summer lined the northern coast of Labrador. Mr. Bradford kept his photographer busily at work taking views of the more remarkable forms. The splendid green hues, so varied and striking; the endless variety in the water-worn forms; the weird noises, now harsh and grating, now loud and roaring, produced by the attrition of the cakes of ice ground together by the slight swell or the conflicting currents, lent unending interest to the scene. The floes had evidently the air of tired and worn travellers; they had been borne for at least a thousand miles from Baffin's Bay; had been

thrown upon one another by storms and ocean currents, broken and frozen together over and over again; they were now rapidly melting away in the bright warm sun, for the water was filled with bits of clear dark ice, the fragments of larger floes. Our vessel, her sails scarcely filled out by the light baffling breeze, rose and fell, ploughing her way through the yielding floes. The water between the cakes was alive with bits of animated ice, myriads of transparent ctenophores crowding the sea from the surface to a depth of a fathom or more. The roseate *Idyia*, throwing off the most delicate reddish tints, seemed besides to reflect the delicate blues and greens cast off by the floes; an Alcinoe-like form, floating on its side, with blood-red tentacles, rose and fell among the ice-cakes, and with these in lesser numbers was that spherical living ball of ice, the Beroe or *Pleurobrachia rhododactyla*. The Alcinoe was the *Mertensia ovum*, a creature as fragile as it is beautiful. It is of a delicate pink color, with iridescent hues; the ovaries bright red, the deep purple red tentacles in striking contrast with the delicate tints of the body itself. From this point until we reached Hopedale in lat  $55^{\circ} 30'$  it constantly occurred in the floe-ice, but was rarely seen in waters from which the ice had disappeared, as in harbors free from ice the *Mertensia* would keep out of view near the bottom; but as soon as the ice drifted in and choked up any harbor we were in, myriads could be seen near the surface, rising and falling between the ice-cakes, gracefully throwing out their tentacles, which were nearly two feet in length, and suddenly withdrawing them when disturbed. No true jelly-fish were to be seen; the season was early for them, but the beautiful polar shell-less snail, the *Clione limacina*

with its long wings and bright red tints was not uncommon.

Stopped by the ice early the next morning we came to anchor at Belles Amours, waiting for a change of wind to allow a passage past or through the floe-ice. The coast is high, abrupt and precipitous. Numerous streams well stocked with trout tumble into the sea, and the drift deposits, of limited extent, consisted of coarse gravels and boulders of syenite.

We looked for insects, finding nothing of particular interest, though noticing that the ants had just come out of their winter quarters. Glad enough were we to find a snail (*Hyalina electrina*), and in the mud at the bottom of the ponds a little bivalve shell (*Pisidium*); under stones in the brooks were larval stone-flies and ephemeræ; while a little salamander (*Plethodon glutinosus*) of a slate color with a paler light dorsal band ran into the water, to my great disappointment just eluding my grasp, as it is doubtful if any salamander occurs much farther north on the coast than this species.

Here the alders were still in blossom, showing that the season had just opened, though the shadberry, the golden thread (*Coptis*) and the bunch-berry (*Cornus canadensis*) were likewise in bloom; on the other hand the mountain ash was just unfolding its buds.

Dredgings carried on in so shallow water as four and six fathoms revealed pelicans' feet (*Aporrhais*) in abundance and very fine large *Serripes groenlandica*, and with them in the mud and sand a great abundance of nemertean and other worms, and Amphipod Crustacea, with fine examples of *Cuma bispinosa*.

The principal house-owner at this fishing station was

a Mr. Buckley, who had been out here for twelve years from Boston. To his comfortable house was attached a conservatory and garden. Though the scanty soil on this barren point looked unpromising enough, it was comparatively rich. He had built his own schooner, a vessel of thirty tons.

On the beach was the skull of a "killer"; it had recently been brought ashore and was surrounded by a number of hungry whelks (*Buccinum undatum*) which were cleaning off the flesh from the bones. The killer is the most voracious of the smaller cetaceans, and is the bulldog among the whales. The head is very blunt, the skull thick, the jaws powerful, the teeth longer than those of the grampus. It is at once known when swimming in the water by its high, narrow, pointed dorsal fin, which projects five or six feet out of water. It attacks with great boldness and pertinacity the right and fin-back whales, gouging out from their lips and side, lumps of flesh, and, as Captain Handy told me, is especially fond of the whale's tongue.

The next day we walked inland, following up the stream which empties into the Gulf at Belles Amours. We however took the wrong side of the brook and failed to see the cascade where the stream, as we were told, falls down over a precipice forty feet high; but from a hill perhaps five hundred feet high, which overlooked the country, we could trace the course of the brook for about two miles, where it ran down a steep ravine, with ponds on either side, from which flowed streams sending thin and broken sheets of water over steep precipices. The lake from which the stream issued was perhaps a mile long, situated on high land, and a foaming stream poured into

it from the northwest, while farther on in another depression was probably a second lake like the one in view. Such is an ordinary Labrador stream—a chain of ponds connected by rapids or waterfalls. There was a dreary sameness to the surface of the country, relieved, however, by a few snow banks. During our ramble we heard the familiar liquid notes of the wood thrush, and saw some coots flying over the pond. In the afternoon the wind hauled into the eastward and was followed by rain.

The 24th was misty and drizzly; the wind east and northeast. We dredged all the afternoon, part of the time scraping a coralline bottom. An Arctic sea-cucumber (*Pentacta calcigera*) was common in five fathoms in mud, with the largest *Serripes* yet met with. The most interesting form brought up was a beautiful hydroid (*Coryne mirabilis*) growing on the red sea-weed (*Ptilota elegans*). It was anchored by its stalk, with bell-shaped medusæ attached, which were provided with four pink eyes and short, thick, knotted tentacles, the pendant proboscis being very long, club-shaped and of a pinkish hue.

While lying at anchor a few boat's lengths from shore we were visited by two or three weasels, which must have swum off to the vessel. They were exceedingly tame, approaching within a foot of my finger even when it was kept in motion.

On one side of our harbor was, as at Caribou Island, a sandy beach where the fishermen could haul their nets for lance. The Newfoundlanders would come here in their clumsy boats for a distance of eight miles, where their vessels were at anchor, and seine for lance fish.



They made a great deal of noise about it, though there were only two boats; one man would stand up in the stern paying out the net, while the full boat's crew would row rapidly around the fish, and another man standing up to his waist in the water hauled in the net; in this way four barrels of fish are often caught at a single haul.

Mr. Phoenix, one of our party, here caught a young salmon eight inches long. The next day (the 25th) saw us still weather-bound with thick fog and rain, clearing up towards the evening. In codfish caught at a depth of fifteen or twenty fathoms we found large fine specimens of the lob worm (*Arenicola piscatorum*) and a fine polar shrimp (*Crangon boreas*). To-day I found the first *Cyanea* or nettling jelly-fish, the species which grows on the banks of Newfoundland by the end of summer, several feet in diameter, with long, trailing tentacles sometimes six fathoms in length; it is these feelers, filled with microscopic darts or lasso-cells, which become entangled with the lines and poison the hands of the fishermen. As yet not a common jelly-fish, the *Aurelia aurita*, had been seen.

The next day we were released from our prison; a fresh northwest wind cleared the ice from the shore, and our good ship made a fine run to Henley Harbor; time from 6 A.M. to 3.30 P.M. As we sailed out of the harbor we could see that the low point running out into the Gulf from the Laurentian background of syenite, was the western extremity of the basin of Cambrian red sandstones and grits which extend between Belles Amours and Anse au Sablon. Skirting the coast within a mile or two of these interesting series of rocks, they are seen

to rise to a height of five or six hundred feet, forming the coast line, but with a contour tame and monotonous compared with the syenitic hills of Bradore. The belt is a narrow one, and while sailing past the shore we could look up through the harbors and bays to the low conical hills of Laurentian gneiss in the interior. Passing by Bradore Bay the lofty buttes of Bradore are seen to rise up from the low foreground of red sandstone. We then passed within sight of Greely Island, where in 1856, during a severe southwest gale, so sudden and common in the Strait, thirty-one vessels for want of good anchorage and shelter were driven upon a lee shore. Parakeet Island then hove in sight, a favorite breeding place for the parrakeet or puffin, with a single house on it, the hospitable mansion of a member of the ubiquitous Jones family, where in 1860 a party from our camp on Caribou Island received board and lodging for which only thanks would be accepted.

We then sight Blanc Sablon. The land here is high and descends to the sea in five very distinct terraces, of which the second is much the highest. There were huge boulders of grit on the beach; the raised beaches were packed with boulders and the terraces in general direction appeared in perspective, as if dipping up the Strait; like river-terraces they were parallel to each other, but the lower one gradually dips down and loses itself in the water, while another dips in the opposite direction. The higher terraces appear as if wooded or green. There were indeed three shades of green; in the lower terrace the debris is covered with a pale green herbage; the older vegetation is darker, while the upper rusty green tint is very dark.

At Blanc Sablon, which was originally so named by Jacques Cartier, the settlement consists of twenty houses; they were painted white and from the vessel appeared like masses of floe-ice stranded on the shore. Of the houses four are "rooms," or fishing establishments.

We then pass the fishing settlement of Forteau, with a lighthouse on the point, besides about twenty houses, and a Catholic Church. Off the lighthouse is Shallop Island; the harbor is two or three miles deep, walled in by vertical cliffs, furrowed and streaked by rain and frost. Into the harbor empties a salmon stream; one man here seems to have the monopoly of the salmon fishery, putting up from twenty to sixty barrels a year; they are salted and sent to Europe.

Now as we pass on, the bay opens and at its head we can see the Laurentian formation, with its low, obtusely pointed gneiss hills; but the general surface of the Labrador coast is very uniform, while the opposite shores of Newfoundland now recede and appear to be much lower. The Straits are about eleven miles wide in their narrowest part.

Sailing on but half a mile off shore at Anse-au-Loup, we can plainly see that the Cambrian rocks are red and gray sandstones—that the strata, almost horizontal, dip a little to the west, descending to the Straits by three rock-terraces or shelves. A large brook here plunges in a broad sheet of foam straight down into the sea. The east side of the harbor of Anse-au-Loup is much higher than the western, the surface is irregular, and the buttressed steeps recall the Palisades of the Hudson. Then we pass along a beautiful green glacia, and on the

northwest face of the bluff are five terraces, with the sandstone strata slightly inclined. Here on the lowest bluff are to be seen four terraces (Fig. *B*).

In the bay east of Anse-au-Loup, whose shores seemed to be well wooded, we can again look through to the original broken Laurentian rock, and the Cambrian sandstone (Fig. *C*) runs out into a low point terminating in a low, shelving, green glacis. On this

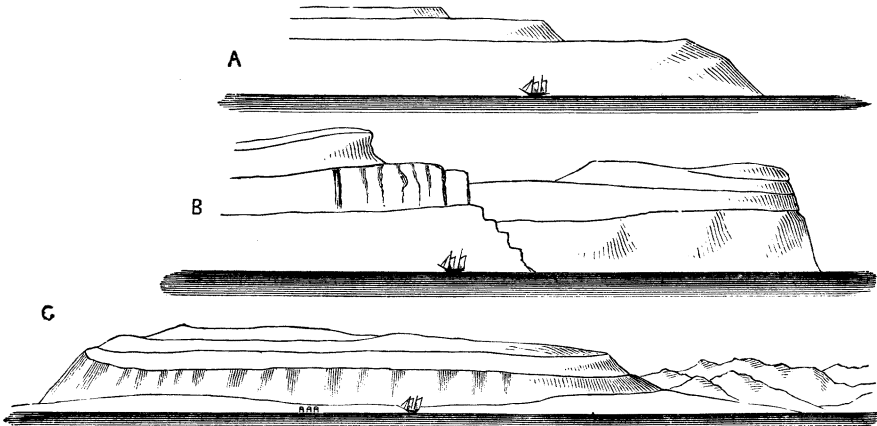


FIG. 3.—*A*, TERRACES AT BLANC SABLON; *B*, AT ANSE-AU-LOUP; *C*, TERRACES SEEN FROM THE MOUTH OF A BAY EAST OF ANSE-AU-LOUP.

point is the fishing hamlet of Semiditch, with but two houses.

The wind freshened off the cliffs, and now sailing on, the rough and fissured syenitic coast is in marked contrast to the Cambrian shores we had just left. Going farther on we pass from syenitic to gneiss rocks, which rise from the water in long swells.

Belle Isle, the Isle of Demons of the early navigators, now heaves in sight; the Labrador coast is more

subdued, the shores sloping to the water's edge. There are no islands along the coast, and within five miles of Henley Harbor the rock becomes entirely gneiss in character, and we lose sight of the rough, hummocky syenitic hills, though masses of flesh-red syenite are seen resting upon the dark gneiss rocks, forming a sea-wall.

Now that notable landmark, the Devil's Dining Table, appears to view, and we soon distinguish Henley and Castle Islands, the two latter like two flat oblong blocks laid by Cyclopean hands on a foundation of rock.

*(To be continued.)*